

# Exhibit F



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1 sides of its platform?

2           A.     In general, all else equal, there  
3     are network effects here that say advertisers  
4     prefer platforms that have more publishers, and  
5     publishers prefer -- prefer platforms that have  
6     more advertisers, all else equal.

7 Q. And why, if at all, does scale  
8 matter to ad exchanges?

9 ATTORNEY EWALT: Objection to  
10 form and foundation.

11 THE WITNESS: Yeah, I'm not -- I  
12 mean, the -- I'm not sure that it does.  
13 I mean, the evidence here is that  
14 ad exchanges are -- there are lots and  
15 lots of ad exchanges competing at various  
16 small sizes. To me, it's the first  
17 indicator that this is not an industry in  
18 which one has to have scale to compete.

19 BY ATTORNEY NAKAMURA:

20 Q. Is it your opinion, sitting here  
21 today, that scale does not matter to the  
22 competitiveness of ad exchanges in digital

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1 display advertising?

2 ATTORNEY EWALT: Objection to  
3 form.

4 THE WITNESS: It's not my opinion  
5 that there's no scale effects at all. I  
6 mean, we talked about network effects, so  
7 you need some number of publishers and  
8 advertisers using your product. And it's  
9 not my opinion that, you know, I could go  
10 launch an ad tech product with five  
11 impressions.

12                   So I think there's some role for  
13                   scale, but I don't think I've seen any  
14                   evidence that you have to be particularly  
15                   large to be able to reach scale. And I  
16                   think that's shown by the large number of  
17                   small competitors that continue to stay  
18                   in the market and -- and win business.

19 BY ATTORNEY NAKAMURA:

20 Q. And how do you define, for example,  
21 by market share, what a "small competitor" is in  
22 the ad exchange business?

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1           A.     I don't have a specific cutoff for  
2   you.  It's pretty common to see a firm of less  
3   than 5 or less than 1 percent.

4                   If you look at the data here, there  
5 are dozens of ad exchanges competing and staying  
6 in the market. That's not a market structure  
7 that, to me, is suggestive that scale is required  
8 to compete.

9 Q. And in your view, as an economist,  
10 are the ad exchanges you're describing  
11 differentiated?

12           A.       They're not identical, so they're  
13 -- I guess they're differentiated. They're  
14 providing the same basic services. They're  
15 taking bids from buy side, and they're bidding on  
16 publisher exchanges. So they're not identical,  
17 but they're -- they seem to be successfully  
18 competing for advertisers and publishers.

Q. And as an economist, what do you understand the word "differentiated" to mean used in the context of comparing different firms?

22           A.     That they're not -- they're not

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1 selling the same thing, that there are  
2 differences in their services.

3           Q.     And why, if at all, in your  
4     opinion, does scale matter to publisher ad server  
5     products?

6 ATTORNEY EWALT: Objection to  
7 form and foundation.

8



Bar Index	Relative Length (approximate)
1	95%
2	85%
3	98%
4	99%
5	92%
6	88%
7	100%
8	90%
9	93%
10	97%
11	25%
12	98%
13	90%
14	99%

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5 BY ATTORNEY NAKAMURA:  
6 Q. And are there network effects that  
7 are relevant to publisher ad servers, in your  
8 opinion?  
9 A. Yes.  
10 Q. What are they?  
11 A. Again, that you want -- I mean,  
12 it's more about the -- the plat -- the rules of  
13 the platform and the extent the ability it has to  
14 attract buyers and sellers. But it's important  
15 for an ad server -- to be successful, that it  
16 attracts publishers and that that set of  
17 publishers and the rules of the ad server attract  
18 advertisers. So it's -- there's network effects  
19 in the -- in the sense that attracting both sides  
20 of the market matters.  
21 Q. And are there, in your opinion,  
22 bidirectional network effects that are of

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1 relatively the same magnitude moving in both  
2 directions for a publisher ad server?  
3 ATTORNEY EWALT: Objection to  
4 form.  
5 THE WITNESS: I think they're --  
6 in all of these technologies, I think  
7 they're relatively of the same magnitude  
8 because the whole business is about  
9 making matches, so you need people  
10 choosing your product on both sides.  
11 BY ATTORNEY NAKAMURA:  
12 Q. So is it your opinion that the  
13 bidirectional nature of network effects for a  
14 publisher ad server are roughly equal to those  
15 found in a advertising ad exchange product?  
16 ATTORNEY EWALT: Objection to  
17 form.  
18 THE WITNESS: I don't -- it's --  
19 I don't know if it's something where you  
20 say "roughly equal." I don't know what  
21 the number is. But I guess conceptually,  
22 absolutely, yes. Because both products

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1 are part -- and, again, I think of these  
2 as part of the -- creating a match, and  
3 at every part of that match, you have to  
4 get a publisher -- you have to get  
5 publishers and advertisers to agree to  
6 use your product.

7 So publishers have to agree to  
8 use the ad server, and advertisers have  
9 to find it worthwhile to buy inventory  
10 from a publisher using that ad server.  
11 So in -- in each of these matched stages,  
12 you need to attract both sides of the  
13 market.

14 BY ATTORNEY NAKAMURA:  
15 Q. But how often, as a relative  
16 matter, do advertisers buy directly into a  
17 publisher's ad server as opposed to, for example,  
18 using a DSP or other intermediary service to  
19 purchase inventory?

20 ATTORNEY EWALT: Objection to  
21 form.

22 THE WITNESS: I mean, any --

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1 anytime that they buy from anybody who's  
2 O&O, they're buying directly into an ad  
3 server.

4 My point is that if they -- if an  
5 ad server -- if Google's ad server didn't  
6 work well such that the rules didn't  
7 create good matches, advertisers would  
8 take their business elsewhere. And  
9 that's a -- that's -- advertisers -- if  
10 the rules of the game that were set up by  
11 the ad server were unattractive,  
12 advertisers are entirely capable of  
13 substituting around by purchasing ads in  
14 other forms.

15 BY ATTORNEY NAKAMURA:  
16 Q. And other than purchasing from O&O  
17 publishers, what examples do you have of an  
18 advertiser buying in directly to a publisher ad  
19 server?

20 A. I mean, anytime that they buy  
21 direct.

22 Q. And are there any examples you have

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1 of indirect purchasing done directly into a  
2 publisher ad server other than through O & O  
3 inventory?

4 ATTORNEY EWALT: Objection to  
5 form.

6 THE WITNESS: I mean, I'm not  
7 sure if it's in -- I mean, obviously, the  
8 O & O is a big deal. But I think that --  
9 yeah, I think the O & O is where I can  
10 see -- the examples I have in mind of  
11 where they purchase indirect. And,  
12 obviously, to me, that's an example of  
13 substituting around the ad server.

14 There may be examples in the  
15 record, but as I sit here, I don't  
16 think -- I can't think of a case where  
17 there's an indirect purchase straight  
18 into an ad server that isn't in an O & O  
19 setting.

20 BY ATTORNEY NAKAMURA:

21 Q. Okay. Let's turn now to  
22 Paragraph 529 of your report, which is on

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1 it causes me to think it looks like the market is  
2 doing well and thus I would need to see some very  
3 clear demonstration of a but-for world that would  
4 have been even better to conclude there's harm.

5 So I wouldn't stop with the output  
6 by itself. That's my point to Plaintiffs'  
7 experts, you need to show a but-for world. But  
8 it certainly tells me that it's going to be a  
9 kind of Herculean task to show harm here because  
10 this market seems to be doing very well. But you  
11 could do it; you just -- they would have had to  
12 show a but-for world to do so.

13 Q. And how do you identify as a  
14 methodological matter, as an economist, when  
15 evaluating a competitiveness of a market,  
16 candidate but-for worlds that you might compare  
17 to the actual world with respect to output?

18 ATTORNEY EWALT: Objection to  
19 form.

20 THE WITNESS: I mean, I -- I -- I  
21 don't know exactly what you're asking,  
22 candidate but-for worlds -- it's the

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1 Page 384.

2 A. Okay.

3

8 Q. As an economist, when analyzing  
9 competition and markets, do you examine whether  
10 output has been reduced relative to a but-for  
11 world without the allegedly restrictive conduct?

12 A. I mean, that's what you would need  
13 to do to show harm. I mean, I think it's an  
14 explicit point I make at some length, is that  
15 Plaintiffs' experts have not done so.

16 Q. And you do not look at, however,  
17 whether output is simply increasing or decreasing  
18 without reference to a but-for world; is that  
19 correct?

20 A. I would certainly look at it. I  
21 look at data -- all data, and when I see output  
22 growing dramatically and exceeding projections,

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1 Plaintiffs' job, as I see it, to explain  
2 what their but-for world is.

3 Candidate but-for worlds would  
4 say, in general terms, Here's some  
5 conduct I think was harmful, and now I'm  
6 going to turn that conduct off and show  
7 you the market would have done better.

8 That's the sort of modeling that  
9 economists do regularly. It wasn't done  
10 here. But, certainly, the idea that I'm  
11 going to turn off a piece of conduct and  
12 show you that the market would perform  
13 better without it is -- is the kind of  
14 analysis that you would have to do.

15 BY ATTORNEY NAKAMURA:

16 Q. Is it your opinion that competition  
17 can be harmed in a market where output is  
18 increasing over time?

19 ATTORNEY EWALT: Objection to  
20 form.

21 THE WITNESS: Yes.  
22

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[REDACTED]

[REDACTED]

[REDACTED]

[REDACTED]

[REDACTED]

[REDACTED]

[REDACTED]

[REDACTED]

[REDACTED]

[REDACTED]

[REDACTED]

[REDACTED]

[REDACTED]

[REDACTED]

[REDACTED]

17 Q. And last question: Can you give me

18 an example, as an economist, of any situation in

19 which a duty to deal would not, in your opinion,

20 be harmful to competition and consumers?

21 ATTORNEY EWALT: Objection to

22 form.

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1 THE WITNESS: I think a duty to

2 deal -- an actual requirement to deal is

3 harmful. I can't think of an example

4 where the duty is not harmful.

5 There might be situations where

6 firms work together in some way that's

7 beneficial, but I think requiring firms

8 to work with their competitors is harmful

9 to the essence of the competitive

10 process.

11 ATTORNEY NAKAMURA: All right.

12 See, we're at time.

13 Thank you very much, Dr. Israel.

14 And we'll go off the record.

15 ATTORNEY EWALT: Not quite. I

16 want to designate the transcript as

17 highly confidential under the protective

18 order in this case.

19 Now we can go off the record.

20 ATTORNEY NAKAMURA: Thank you.

21 THE VIDEOGRAPHER: Off the record

22 at 6:36. And this ends today's

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1 deposition.

2

3 (Witness excused.)

4

5 (Deposition concluded at 6:36 p.m.

6 EDT)

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## C E R T I F I C A T E

1 I, Cindy L. Sebo, Nationally Certified Court

2 Reporter herein, do hereby certify that the foregoing

3 deposition of MARK A. ISRAEL, PH.D. was taken before

4 me pursuant to notice at the time and place indicated;

5 that said witness duly swore to tell the truth, the

6 whole truth, and nothing but the truth under penalties

7 of perjury; that said testimony of witness was

8 correctly recorded to the best of my abilities in

9 machine shorthand, thereafter transcribed under my

10 supervision with computer-aided transcription; that

11 deposition is a true and accurate record of the

12 testimony given by the witness; that I am neither

13 counsel, nor kin to any party in said action, nor

14 interested in the outcome; and that a copy of this

15 transcript obtained from a source other than the court

16 reporting firm, including an adversary or co-counsel

17 in the matter, is uncertified and may not be used at

18 trial.



19 CINDY L. SEBO, RMR, CRR, CLR, RPR, CCR, CSR,

20 RSA, CA CSR 14409, NJ Certified CR 30XI0024460,

21 NJ Certified RT 30XR00019500, NM CSR 589, NY

22 Realtime Court Reporter, NY Association Certified

Reporter, OR CSR 230105, TN CSR 998, TX CSR 12778,

WA CSR 23005926, Notary Public

## INSTRUCTIONS TO WITNESS

1 Please read your deposition over  
 2 carefully and make any necessary corrections.  
 3 You should state the reason in the appropriate  
 4 space on the errata sheet for any corrections  
 5 that are made.  
 6 After doing so, please sign the  
 7 errata sheet and date it.  
 8 You are signing same subject to the  
 9 changes you have noted on the errata sheet, which  
 10 will be attached to your deposition.  
 11 It is imperative that you return  
 12 the original errata sheet to the deposing  
 13 attorney within thirty (30) days of receipt of  
 14 the deposition transcript by you. If you fail to  
 15 do so, the deposition transcript may be deemed to  
 16 be accurate and may be used in court.

CAPTION: United States, et al. vs. Google, LLC

1 MARK A. ISRAEL, PH.D. NO. 2024-933018  
 2 E R R A T A S H E E T  
 3 PAGE\_\_\_\_\_ LINE\_\_\_\_\_ CHANGE \_\_\_\_\_  
 4 REASON FOR CHANGE:  
 5 \_\_\_\_\_  
 6 PAGE\_\_\_\_\_ LINE\_\_\_\_\_ CHANGE \_\_\_\_\_  
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CAPTION: United States, et al. vs. Google, LLC

1 MARK A. ISRAEL, PH.D. NO. 2024-933018  
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 22 REASON FOR CHANGE:  
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## ACKNOWLEDGMENT OF WITNESS

1  
 2 I, MARK A. ISRAEL, PH.D., do hereby certify that  
 3 I have read the foregoing pages herein, and that the  
 4 same is a correct transcription of the answers given  
 5 by me of the proceedings taken remotely to the  
 6 questions therein propounded under penalty of perjury,  
 7 except for the corrections or changes in form or  
 8 substance, if any, noted in the attached errata sheet.  
 9 \_\_\_\_\_  
 10 DATE SIGNATURE  
 11  
 12  
 13  
 14  
 15 Subscribed and sworn to before me  
 16 this \_\_\_\_ day of \_\_\_\_\_, 20\_\_\_\_.  
 17  
 18 My Commission expires:  
 19 \_\_\_\_\_  
 20  
 21  
 22 Notary Public

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Page	Line	Change	Reason
		quotation)	
		[REDACTED]	Transcription error.
		[REDACTED]	Transcription error.
247	19	“EMARKETER” should be “eMarketer”	Transcription error.
248	1	“EMARKETER” should be “eMarketer”	Transcription error.
267	9	“indirect Web, nonvideo display inventory” should be “indirect, web, non-video display inventory”	Transcription error.
		[REDACTED]	Transcription error.
		[REDACTED]	Transcription error.
		[REDACTED]	Transcription error.
		[REDACTED]	Transcription error.
279	15	“answer in” should be “answer on”	Transcription error.
305	15	“can” should be “can-”	Transcription error.
		[REDACTED]	Transcription error.
		[REDACTED]	Transcription error.
		[REDACTED]	Transcription error..
339	14	“is that” should be “that”	Clarification.
340	15	“a competitiveness” should be “the competitiveness”	Transcription error.
		[REDACTED]	Transcription error.
374	10	“EMARKETER” should be “eMarketer”	Transcription error.
378	11	“test” should be “test-”	Transcription error.
		[REDACTED]	Transcription error.
385	20	“this auto” should be “this was auto”	Clarification.
389	10	“Demand” should be “demand”	Transcription error.
390	9	“ad” should be “Ads”	Transcription error.
396	8	“and done you” should be “and did you”	Transcription error.
		[REDACTED]	Transcription error.
402	6	“Demand” should be “demand”	Transcription error.
		[REDACTED]	Transcription error.



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Page	Line	Change	Reason
417	22	"make up the" should be "makeup, the"	Transcription error.
418	1	"the respondents looks" should be "the respondents, looks"	Transcription error
█	█	████████████████████	Transcription error.
█	█	████████████████████	Transcription error.
█	█	████████████████████	Transcription error.
█	█	████████████████████	Clarification.
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477	12	"a ad server" should be "an ad server"	Clarification.
█	█	████████████████████	Transcription error.

I have inspected and read my deposition and have listed all changes and corrections above, along with my reasons therefor.

Date: 4/10/2024

Signature: Mark A. [Signature]